4-3-06

To: Examiner Mike Qi

From: Jeff Harrison, x22511, JEF-4B68

Re: Preventing galvanic phenomenon, using thickness of amorphous or polycrystalline transparent conductive film

Attached are the search histories and edited results from Chemical Abstracts, Inspec, and Science Citation Index databases.

I doubt that I found any art that is close enough to be useful. But I suggest that you review the attached results.

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     CAS/STN FILE 'REGISTRY' ENTERED AT 13:53:50 ON 03 APR 2006
L1          200 SEA ABB=ON  PLU=ON  IN.O.SN/MF OR IN O SN/ELF
L2           79 SEA ABB=ON  PLU=ON  IN.O.ZN/MF OR IN O ZN/ELF
L3          527 SEA ABB=ON  PLU=ON  O.ZN/MF OR O ZN/ELF
L4          200 SEA ABB=ON  PLU=ON  IN.O.SN/MF OR IN O SN/ELF
L5           76 SEA ABB=ON  PLU=ON  IN.O.SN.ZN/MF OR IN O SN ZN/ELF
L6          500 SEA ABB=ON  PLU=ON  O.SN/MF OR O SN/ELF

     FILE 'HCAPLUS' ENTERED AT 13:57:38 ON 03 APR 2006
L7       121968 SEA ABB=ON  PLU=ON  TCO OR CTO OR ITO OR ITZO OR IZTO OR IZO OR ZO OR ZNO####
L8       177226 SEA ABB=ON  PLU=ON  (L1 OR L2 OR L3 OR L4 OR L5 OR L6) OR L7
L9         7971 SEA ABB=ON  PLU=ON  L8 AND (AMORPH? OR NON CRYST######## OR
                NONCRYST? OR POLYCRYST? OR POLY CRYST########)
L10         201 SEA ABB=ON  PLU=ON  L8 AND GALVANIC
L11        4146 SEA ABB=ON  PLU=ON  L8 AND ?CORRO?
L12       12008 SEA ABB=ON  PLU=ON  L8 AND (PREVENT? OR PROTECT?)
L13        8743 SEA ABB=ON  PLU=ON  L8 AND THICKNESS###
L14        7082 SEA ABB=ON  PLU=ON  L8 AND (ANG OR AA OR ANGSTROM OR NM OR MU
                OR MICRON OR MUM)(3A)(THICK###### OR THIN OR FILM OR ?LAYER? OR ?COAT?)
L15       12791 SEA ABB=ON  PLU=ON  (L13 OR L14)
L16        1220 SEA ABB=ON  PLU=ON  L9 AND L15
L17          77 SEA ABB=ON  PLU=ON  (L10 OR L11 OR L12) AND L16
L18          33 SEA ABB=ON  PLU=ON  L17 AND TRANSPAREN?
L19          21 SEA ABB=ON  PLU=ON  L17 AND CONDUCT######(3A)(FILM OR ?LAYER? OR ?COAT?)
L20           1 SEA ABB=ON  PLU=ON  L17 AND GALVANIC
L21          17 SEA ABB=ON  PLU=ON  L17 AND ?CORRO?
L22          21 SEA ABB=ON  PLU=ON  L17 AND TRANSPAREN#####(4A)CONDUCT#####
L23          18 SEA ABB=ON  PLU=ON  L18 AND L19
L24           4 SEA ABB=ON  PLU=ON  L18 AND L19 AND L21
L25           4 SEA ABB=ON  PLU=ON  L21 AND L22
L26           5 SEA ABB=ON  PLU=ON  L20 OR L24 OR L25
                D ALL HITSTR TOT
L27        1058 SEA ABB=ON  PLU=ON  (L1 OR L2 OR L3 OR L4 OR L5 OR L6)(L)AMORPH?
L28          17 SEA ABB=ON  PLU=ON  (L1 OR L2 OR L3 OR L4 OR L5 OR L6)(L)NONCRYST?
L29           4 SEA ABB=ON  PLU=ON  (L1 OR L2 OR L3 OR L4 OR L5 OR L6)(L)NON CRYST########
L30         496 SEA ABB=ON  PLU=ON  (L1 OR L2 OR L3 OR L4 OR L5 OR L6)(L)POLYCRYST?
L31           4 SEA ABB=ON  PLU=ON  (L1 OR L2 OR L3 OR L4 OR L5 OR L6)(L)POLY CRYST#######
L32        1560 SEA ABB=ON  PLU=ON  (L27 OR L28 OR L29 OR L30 OR L31)
L33           0 SEA ABB=ON  PLU=ON  L32 AND GALVANIC
L34          13 SEA ABB=ON  PLU=ON  L32 AND ?CORRO?
L35         237 SEA ABB=ON  PLU=ON  L32 AND THICK#######
L36         230 SEA ABB=ON  PLU=ON  L32 AND (ANG OR AA OR ANGSTROM OR NM OR MU
                OR MICRON OR MUM)(6A)(THICK###### OR THIN OR FILM OR ?LAYER? OR ?COAT?)
L37         563 SEA ABB=ON  PLU=ON  L32 AND (THICK####### OR THIN###### OR
                ULTRATHIN?)(6A)(FILM OR ?LAYER? OR ?COAT?)
L38           3 SEA ABB=ON  PLU=ON  L34 AND (L35 OR L36 OR L37)
L39           2 SEA ABB=ON  PLU=ON  L38 NOT L26
                D ALL HITSTR TOT
L40        1679 SEA ABB=ON  PLU=ON  (POLYCRYST? OR POLY CRYST########### OR AMORPH###### OR NONCRYST? OR
NON CRYST###########)(4A)(ITO OR IZO OR ZNO#### OR ITZO OR IZTO OR CONDUCT######(2A)TRANSPAREN########)
L41          39 SEA ABB=ON  PLU=ON  (POLYCRYST? OR POLY CRYST########### OR
                AMORPH###### OR NONCRYST? OR NON CRYST###########)(4A)(CTO OR TCO)
L42       11608 SEA ABB=ON  PLU=ON  TRANSPAREN#####(1A)CONDUCT#####
L43        1763 SEA ABB=ON  PLU=ON  CTO OR TCO
L44        6581 SEA ABB=ON  PLU=ON  ((L1 OR L2 OR L3 OR L4 OR L5 OR L6)) AND
                (L40 OR L41 OR L42 OR L43)
L45         456 SEA ABB=ON  PLU=ON  (L40 OR L41) AND (L42 OR L43)
L46        6737 SEA ABB=ON  PLU=ON  L44 OR L45
L47           5 SEA ABB=ON  PLU=ON  L46 AND GALVANIC
L48           1 SEA ABB=ON  PLU=ON  L46 AND NONCORROS?
L49          58 SEA ABB=ON  PLU=ON  L46 AND CORROS?
L50           5 SEA ABB=ON  PLU=ON  L46 AND CORROD?
L51           0 SEA ABB=ON  PLU=ON  L46 AND NONCORROD?
L52           0 SEA ABB=ON  PLU=ON  L46 AND UNCORROD?
L53          66 SEA ABB=ON  PLU=ON  (L47 OR L48 OR L49 OR L50 OR L51 OR L52)
L54           7 SEA ABB=ON  PLU=ON  L39 OR L26
L55          62 SEA ABB=ON  PLU=ON  L53 NOT L54
L56           6 SEA ABB=ON  PLU=ON  L55 AND GALVAN?
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FILE 'HCAPLUS' ENTERED AT 13:57:38 ON 03 APR 2006

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L57     117814 SEA ABB=ON  PLU=ON  CORROSION/CT OR "CORROSION AND CORROSION
               PREVENTION"/CT OR ("STRESS CORROSION CRACKING"/CT OR TARNISH/CT
                OR TARNISHING/CT OR "CATHODIC PROTECTION"/CT OR "CORROSION
               INHIBITORS"/CT OR "CORROSION KINETICS"/CT OR "CORROSION
               PREVENTION"/CT OR "CORROSION-RESISTANT MATERIALS"/CT) OR PASSIVITY/CT
L58        901 SEA ABB=ON  PLU=ON  ((L1 OR L2 OR L3 OR L4 OR L5 OR L6) OR L42
               OR L43) AND (GALVANIC OR L57)
L59         78 SEA ABB=ON  PLU=ON  L58 AND THICK?
L60         80 SEA ABB=ON  PLU=ON  L58 AND THIN?
L61         40 SEA ABB=ON  PLU=ON  L58 AND (ANG OR AA OR ANGSTROM OR NM OR MU
               OR MICRON OR MUM)(6A)(THICK###### OR THIN OR FILM OR ?LAYER?
               OR ?COAT?)
L62          0 SEA ABB=ON  PLU=ON  L58 AND ULTRATHIN?
L63         55 SEA ABB=ON  PLU=ON  L58 AND THICKNESS
L64        157 SEA ABB=ON  PLU=ON  (L59 OR L60 OR L61 OR L62 OR L63)
L65          6 SEA ABB=ON  PLU=ON  L64 AND AMORPH?
L66          0 SEA ABB=ON  PLU=ON  L64 AND NONCRYST?
L67          0 SEA ABB=ON  PLU=ON  L64 AND UNCRYST?
L68          0 SEA ABB=ON  PLU=ON  L64 AND NON CRYST?
L69         41 SEA ABB=ON  PLU=ON  L64 AND ?STRUCTUR?
L70          0 SEA ABB=ON  PLU=ON  L64 AND UNORDER?
L71          0 SEA ABB=ON  PLU=ON  L64 AND DISORDER?
L72         41 SEA ABB=ON  PLU=ON  L69 NOT (L56 OR L54)
L73         25 SEA ABB=ON  PLU=ON  L72 AND FILM
               D ALL HITSTR TOT
L74         16 SEA ABB=ON  PLU=ON  L72 NOT L73
L75          4 SEA ABB=ON  PLU=ON  L74 AND 1990-2000/PY
               D ALL HITSTR TOT
L76         12 SEA ABB=ON  PLU=ON  L74 NOT L75
               D ALL HITSTR TOT
               E JAIN F/RE
L77          0 SEA ABB=ON  PLU=ON  ("JAIN F . . .  /RE and . . . )
L78          0 SEA ABB=ON  PLU=ON  ("JAIN F . . .  /RE and . . . )
L79          0 SEA ABB=ON  PLU=ON  ("JAIN F . . .  /RE and . . . )
L80          0 SEA ABB=ON  PLU=ON  ("JAIN F . . .  /RE and . . . )
L81          0 SEA ABB=ON  PLU=ON  ("JAIN F . . .  /RE and . . . )
L82        109 SEA ABB=ON  PLU=ON  JAIN F?/AU
L83          5 SEA ABB=ON  PLU=ON  (L1 OR L2 OR L3 OR L4 OR L5 OR L6) AND L82
L84          5 SEA ABB=ON  PLU=ON  (L7 OR L8 OR L9 OR L10 OR L11 OR L12 OR
               L13 OR L14 OR L15 OR L16) AND L82
L85          1 SEA ABB=ON  PLU=ON  (L18 OR L19 OR L20 OR L21 OR L22 OR L23 OR
               L24 OR L25 OR L26 OR L27 OR L28 OR L29 OR L30 OR L31 OR L32 OR
               L33 OR L34 OR L35 OR L36 OR L37 OR L38 OR L39 OR L40 OR L41 OR
               L42 OR L43 OR L44 OR L45 OR L46) AND L82
L86          5 SEA ABB=ON  PLU=ON  L83 OR L84 OR L85
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------------ 4/3/06 10/029,145

03apr06 14:06:16 User259284 Session D3567.3

SYSTEM:OS -- DIALOG OneSearch
File 34:SciSearch(R) Cited Ref Sci 1990-2006/Mar W4
(c) 2006 Inst for Sci Info
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
(c) 1998 Inst for Sci Info

Set	Items	Description
S1	1135	CR=YAMAMOTO M, 1996?
S2	0	S1 AND TRANSPAREN?
S3	1	S1 AND GALVANI?
S4	10	S1 AND CORRO?
S5	0	S1 AND NONCORRO?
S6	0	S1 AND UNCORRO?
S7	71	S1 AND DEGRAD?
S8	9	S1 AND DETERIORA?
S9	4	S1 AND AMORPH?
S10	14	S3 OR S8 OR S9
S11	1	4AND7
S12	15	S10:S11
S13	8	S12/2001-2006
S14	7	S12 NOT S13
S15	0	S3:S11 AND LCD? ?
S16	0	S3:S11 AND LIQ()CRYST?
S17	0	S3:S11 AND LIQUID()CRYST?

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------------ 4/3/06   10/029,145

       03apr06 13:46:38 User259284 Session D3567.2

File    2:INSPEC 1898-2006/Mar W3

Set      Items    Description
S1        8889    TCO OR CTO OR ITO OR IZO OR IZTO OR ITZO
S2       12651    CI=(ZN SS(S)O SS)
S3        6951    CI=(IN SS(S)O SS)
S4        8968    CI=(SN SS(S)O SS)
S5        2713    TRANSPAREN??????(2N)CONDUCT????????
S6       28659    S1:S5
S7          89    S6 AND GLASSY
S8         632    S6 AND DISORDER?
S9           1    S6 AND UNORDER?
S10          0    S6 AND NONORDER?
S11          1    S6 AND NON()ORDER???????
S12        110    S6 AND NONCRYST?
S13          6    S6 AND NON()CRYST?????????????
S14       1777    S6 AND AMORPH?
S15       2484    S7:S14
S16         71    S15 AND ('CORROSION' OR R5:R9 OR R11:R12 OR CORROD?????? OR
                CORROS? OR NONCORRO?)
S17          4    S16 AND THICKNESS?
S18         11    S16 AND TRANSPAREN?
S19         18    S16 AND CONDUCT?
S20          3    S16 AND GALVAN?
S21         24    S17:S20
S22        300    AMORPH???????(3N)(ITO OR TRANSPAREN??????)
S23        212    POLYCRYST?(3N)(ITO OR TRANSPAREN??????)
S24          4    NONCRYST?(3N)(ITO OR TRANSPAREN??????)
S25          5    NON()CRYST??????????(3N)(ITO OR TRANSPAREN??????)
S26        513    S22:S25
S27       3022    CONDUCT???????(3N)(ITO OR TRANSPAREN??????)
S28         77    26AND27
S29          0    S28 AND GALVANI?
S30          0    S28 AND CORROD?
S31          0    S28 AND CORROS?
S32          0    S28 AND NONCORRO?
S33          1    S28 AND DEGRAD?
S34          0    S28 AND PROTECT?
S35          1    S28 AND PREVENT?
S36          1    S28 AND AVOID??????
S37          0    S28 AND ELIMINAT?
S38          3    S33:S36
S39         34    AMORPH??????(W)(CTO? ? OR TCO? ? OR ITO? ?)
S40          8    AMORPH??????(W)TRANSPAREN??????()CONDUCT??????
S41          0    AMORPH??????()CONDUCT??????()TRANSPAREN???????
S43         42    S39:S40
S44          0    S43 AND CORROD?
S45          0    S43 AND CORROS?
S46          0    S43 AND NONCORRO?
S47          1    S43 AND DEGRAD?
S48      52007    'AMORPHOUS SEMICONDUCTORS' OR 'AMORPHOUS STATE' OR CC='B25-
               20F'
S49      29085    S6 OR S22:S27
S50         49    S49 AND GALVANI?
S51        329    S49 AND  CORRO??????????
S52          1    S49 AND NONCORRO??????????
S53          1    S49 AND UNCORRO??????????
S54         17    S50 AND S51:S53
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------------  4/3/06   10/029,145


     FILE 'HCAPLUS' ENTERED AT 15:52:57 ON 03 APR 2006
                E SMITH F, 1981/RE
L1            2 SEA ABB=ON  PLU=ON  "SMITH F, 1981, V128, P1083, J ELECTROCHEM
                SOC"/RE
                D ALL TOT

     FILE 'SCISEARCH' ENTERED AT 15:53:37 ON 03 APR 2006
                E SMITH F T J, 1981/RE
L2            7 SEA ABB=ON  PLU=ON  "SMITH F T J, 1981, V128, P1083, J
                ELECTROCHEM SOC"/RE
                D ALL TOT

     FILE 'STNGUIDE' ENTERED AT 15:54:05 ON 03 APR 2006

     FILE 'HCAPLUS' ENTERED AT 15:55:13 ON 03 APR 2006
L3            1 SEA ABB=ON  PLU=ON  THIN METALLIC OXIDES/TI AND TRANSPARENT
                CONDUCTORS/TI
                D ALL
                E MANIFACIER, J/RE
                E MANIFACIER/RE
                E MANIFACIER J, 1982/RE
L4           76 SEA ABB=ON  PLU=ON  "MANIFACIER J, 1982, V90, P297, THIN SOLID
                FILMS"/RE OR "MANIFACIER J, 1982, V99, P297, THIN SOLID
                FILMS"/RE
L5            2 SEA ABB=ON  PLU=ON  L4 AND AMORPH?
                D ALL TOT
L6           10 SEA ABB=ON  PLU=ON  L4 AND POLYCRYST?
L7            0 SEA ABB=ON  PLU=ON  L4 AND POLY CRYST#######
L8            0 SEA ABB=ON  PLU=ON  L4 AND NONCRYST?
L9            0 SEA ABB=ON  PLU=ON  L4 AND NON CRYST######
L10           4 SEA ABB=ON  PLU=ON  L4 AND MIX#######
L11          14 SEA ABB=ON  PLU=ON  L6 OR L10
L12          13 SEA ABB=ON  PLU=ON  L11 NOT L5
                D ALL TOT
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43/9/42
DIALOG(R)File 2:INSPEC

02741435 INSPEC Abstract Number: A81086620, B81040416
Title: **Amorphous transparent conductors**: The CdO-SnO/sub 2/ system
Author(s): Smith, F.T.J.; Lyu, S.L.
Author Affiliation: Res. Labs., Eastman Kodak Co., Rochester, NY, USA
Journal: Journal of the Electrochemical Society vol.128, no.5 p. 1083-8
Publication Date: May 1981 Country of Publication: USA
CODEN: JESOAN ISSN: 0013-4651
Language: English Document Type: Journal Paper (JP)
Treatment: Experimental (X)
Abstract: In the CdO-SnO/sub 2/ system both end members and the phases Cd/sub 2/SnO/sub 4/ and CdSnO/sub 3/ have been reported to be useful transparent conductors. The present report concerns amorphous sputtered films having compositions ranging from 20 to 80 mole percent CdO in SnO/sub 2/. The authors have determined the properties of both as-deposited and annealed films as functions of both film composition and sputtering conditions. From these results, the optical and electrical properties of the films have been correlated with film structure and composition. The optimum conditions for obtaining highly conductive and transparent films are described. Films having a transmission of 80%-90% in the visible and a sheet resistance of less than 5 Omega /sq can be deposited under these conditions. (15 Refs)
Subfile: A B
Descriptors: cadmium compounds; electrical conductivity of amorphous semiconductors and insulators; light transmission; optical films; semiconductor thin films; sputtered coatings; tin compounds
Identifiers: CdO-SnO/sub 2/ system; amorphous sputtered films; film composition; sputtering conditions; electrical properties; film structure; transmission; sheet resistance; **amorphous transparent conductors**
Class Codes: A7220F (Low-field transport and mobility; piezoresistance); A7280J (Other crystalline inorganic semiconductors); A7360F (Semiconductor films); A7820D (Optical constants and parameters); A7865J (Nonmetals); B2520E (Oxides and ferrites); B2550F (Metallisation)
? t s

21/9/15
DIALOG(R)File 2:INSPEC

07029147 INSPEC Abstract Number: A9821-6855-031
Title: The microstructure of **transparent** and electrically **conducting** titanium nitride films
Author(s): Kiuchi, M.; Chayahara, A.; Tarutani, M.; Takai, Y.;
Author Affiliation: Nat. Res. Inst., Osaka, Japan
Journal: Materials Chemistry and Physics Conference Title: Mater. Chem. Phys. (Switzerland) vol.54, no.1-3 p.330-3
Publisher: Elsevier,
Publication Date: July 1998 Country of Publication: Switzerland
CODEN: MCHPDR ISSN: 0254-0584
SICI: 0254-0584(199807)54:1/3L.330:MTEC;1-3
Material Identity Number: D750-98010
U.S. Copyright Clearance Center Code: 0254-0584/98/$19.00
Conference Title: Symposium H of the 4th IUMRS International Conference in Asia
Conference Date: 16-18 Sept. 1997 Conference Location: Chiba, Japan
Document Number: S0254-0584(98)00035-2
Language: English Document Type: Conference Paper (PA); Journal Paper
Treatment: Experimental (X)
Abstract: The microstructure of **electrically conducting and transparent titanium nitride (TiN) films**, produced by the dynamic ion beam mixing technique, have been studied. These films consist of small grains of TiN and an **amorphous** layer. The film is continuous and does not react with the substrate. This paper discusses the morphology and properties of TiN films and their nucleation process. (11 Refs)
Chemical Indexing:
TiN bin - Ti bin - N bin (Elements - 2)
Si sur - Si el (Elements - 1)

21/9/24
DIALOG(R)File 2:INSPEC

03535052 INSPEC Abstract Number: A85115960
Title: Electrochemical investigation of electrochromism in **transparent conductive** oxides
Author(s): Cogan, S.F.; Anderson, E.J.; Plante, T.D.; Rauh, R.D.
Author Affiliation: EIC Labs. Inc., Norwood, MA, USA
Journal: Applied Optics vol.24, no.15 p.2282-3
Publication Date: 1 Aug. 1985 Country of Publication: USA
CODEN: APOPAI ISSN: 0003-6935
U.S. Copyright Clearance Center Code: 0003-6935/85/152282-02$02.00/0
Language: English Document Type: Journal Paper (JP)
Treatment: Experimental (X)
Abstract: Electrochromic windows have been proposed as a means of variably controlling radiant energy transfer in buildings. In general, an electrochromic window is a multilayer thin film device that consists of two outer **transparent** electronic **conductors** , an active electrochromic material, an ion **conductor**, and a counterelectrode. If reversible solid state electrochemical insertion reactions, combined with the appropriate passive optical properties, can be achieved in **transparent conductive** oxides, it may have significant advantages for electrochromic window design. The authors discuss the results of electrochemical studies of Li insertion in four **transparent conductive** oxides: In/sub 2/O/sub 3/:Sn; doped SnO/sub 2/; **noncrystalline ITO** sputtered from a 91% In/sub 2/O/sub 3/; 9% SnO/sub 2/ target; and evaporated In doped In/sub 2/O/sub 3/. (5 Refs)
Subfile: A
Descriptors: **electrochemistry**; electrochromism; indium; indium compounds; optical elements; optical materials; tin; tin compounds; **transparency**
Identifiers: electrochromic windows; In/sub 2/O/sub 3/:In; radiant energy transfer; multilayer thin film device; **transparent** electronic **conductors**; active electrochromic material; ion **conductor**; counterelectrode; Li insertion; **transparent conductive** oxides; In/sub 2/O/sub 3/:Sn; doped SnO/sub 2/
Class Codes: A4270F (Other optical materials); A4280E (Shutters, windows, diaphragms, deflectors, choppers, and optical scanners); A7820J (Electro-optical effects); A8245 (Electrochemistry and electrophoresis)

38/9/1
DIALOG(R)File 2:INSPEC

06883888 INSPEC Abstract Number: A9810-8630J-110, B9805-8420-169
Title: Development and application of low temperature magnetron sputtered ITO thin films for a-Si:H based junction solar cells
Author(s): Terzini, E.; Nobile, G.; Polichetti, T.; Thilakan, P.
Author Affiliation: ENEA, Portici, Italy
Conference Title: Conference Record of the Twenty Sixth IEEE Photovoltaic Specialists Conference - 1997 (Cat. No.97CB36026) p.667-70
Publisher: IEEE, New York, NY, USA
Publication Date: 1997 Country of Publication: USA 1451 pp.
ISBN: 0 7803 3767 0 Material Identity Number: XX98-00408
U.S. Copyright Clearance Center Code: 0 7803 3767 0/97/$10.00
Conference Title: Conference Record of the Twenty Sixth IEEE Photovoltaic Specialists Conference - 1997
Conference Sponsor: IEEE Electron Devices Soc
Conference Date: 29 Sept.-3 Oct. 1997 Conference Location: Anaheim, CA, USA
Language: English Document Type: Conference Paper (PA)
Treatment: Experimental (X)
Abstract: This paper reports on the optimization of ITO films deposited by RF magnetron sputtering method from In/sub 2/O/sub 3//SnO/sub 2/ target. In view of the application of this **transparent conductive** oxide as top layer in amorphous and a-Si/c-Si heterojunction solar cells, low temperature and low sputtering power have been selected in order to **avoid** damages of underlying device. **Transition of ITO from amorphous to mixed amorphous/crystalline phase** has been observed at room temperature with increasing deposition power. Low resistivity amorphous oxide layers (2.8.10/sup -4/ Omega .cm) have been achieved at low RF power density. Optical transmittance of this film stays above 82% in the visible range. a-Si:H p-i-n and a-Si/c-Si heterojunction solar cells with 9.4% and 14.5% efficiency respectively have been realized with this ITO as top electrode, after device thermal annealing at 150 degrees C. (14 Refs)
Subfile: A B
Descriptors: amorphous semiconductors; annealing; elemental semiconductors; hydrogen; indium compounds; p-n heterojunctions; semiconductor thin films; silicon; solar cells; sputtered coatings; tin compounds
Identifiers: low temperature magnetron sputtered ITO thin films; a-Si:H based junction solar cells; In/sub 2/O/sub 3//SnO/sub 2/ target; **transparent conductive** oxide; top layer; a-Si/c-Si heterojunction solar cells; amorphous solar cells; mixed amorphous/crystalline phase; low resistivity amorphous oxide layers; optical transmittance; a-Si:H p-i-n heterojunction solar cells; thermal annealing; 150 C; 9.4 percent; 14.5 percent; Si:H; ITO; In/sub 2/O/sub 3/-SnO/sub 2/; InSnO

47/9/1
DIALOG(R)File 2:INSPEC

06134888 INSPEC Abstract Number: A9602-7570-053
Title: Coercivity enhancement of Co/Pt superlattices through underlayer microstructure modification
Author(s): Hatwar, T.K.; Brucker, C.F.
Author Affiliation: Opt. Recording Mater. Lab., Eastman Kodak Co., Rochester, NY, USA
Journal: IEEE Transactions on Magnetics Conference Title: IEEE Trans. Magn. (USA) vol.31, no.6, pt.1 p.3256-8
Publication Date: Nov. 1995 Country of Publication: USA
CODEN: IEMGAQ ISSN: 0018-9464
U.S. Copyright Clearance Center Code: 0018-9464/95/$04.00
Conference Title: INTERMAG '95. 1995 IEEE International Magnetics Conference
Conference Date: 18-21 April 1995 Conference Location: San Antonio, TX, USA
Language: English Document Type: Conference Paper (PA); Journal Paper (JP)
Treatment: Experimental (X)
Abstract: A major effort is directed toward increasing the coercivity of Co/Pt superlattice films for practical applications. We have used **amorphous ITO** as the underlayer and have studied the microstructure and magnetic properties of Co/Pt multilayer film by varying the deposition conditions of the underlayer. We have correlated observed microstructural features with coercivity and squareness behavior. A smooth underlayer deposited at low pressure results in high squareness but low coercivity, whereas a rough underlayer deposited at high pressure produces Co/Pt films with low squareness but high coercivity. We attribute the increase in coercivity to a decrease in Co/Pt columnar diameter and to enhanced domain wall pinning because of morphology-induced micro-structural defects such as irregular interfacial and columnar boundaries, and a decrease in columnar diameter. The concurrent reduction in squareness is attributed to a decrease in anisotropy because of **degraded** crystallinity and admixture of fcc(200) texture. Underlayer morphology can be easily controlled by sputtering pressure for the optimum combination of coercivity and squareness. (5 Refs)
Subfile: A
Descriptors: cobalt; coercive force; magnetic domain walls; magnetic multilayers; platinum; sputtered coatings
Identifiers: coercivity; Co/Pt superlattices; underlayer microstructure; **amorphous ITO**; magnetic properties; multilayer films; squareness; domain wall pinning; morphology; defects; interfacial boundaries; columnar boundaries; anisotropy; crystallinity; texture; sputtering; Co-Pt; ITO; InSnO
Class Codes: A7570F (Magnetic ordering in multilayers); A7550R (Magnetism in interface structures); A7560E (Magnetization curves, hysteresis, Barkhausen and related effects); A7560C (Magnetic domain walls and domain structure); A7570K (Domain structure in magnetic films (magnetic bubbles))
Chemical Indexing:
Co-Pt int - Co int - Pt int - Co el - Pt el (Elements - 1,1,2)
InSnO sur - In sur - Sn sur - O sur - InSnO ss - In ss - Sn ss - O ss (Elements - 3)

43/9/33
DIALOG(R)File 2:INSPEC

06188093 INSPEC Abstract Number: A9606-6855-060
Title: On the homogeneity of sputter-deposited ITO films. 2. Etching behaviour
Author(s): van den Meerakker, J.E.A.M.; Baarslag, P.C.; Walrave, W.; Vink, T.J.; Daams, J.L.C.
Author Affiliation: Philips Res. Lab., Eindhoven, Netherlands
Journal: Thin Solid Films vol.266, no.2 p.152-6
Publisher: Elsevier,
Publication Date: 1 Oct. 1995 Country of Publication: Switzerland
CODEN: THSFAP ISSN: 0040-6090
SICI: 0040-6090(19951001)266:2L.152:HSDF;1-0
Material Identity Number: T070-96002
U.S. Copyright Clearance Center Code: 0040-6090/95/$09.50
Language: English Document Type: Journal Paper (JP)
Treatment: Experimental (X)
Abstract: The etching behaviour of sputter-deposited tin-doped indium oxide (ITO) films in 8 M HCl solutions was investigated. The etch rate was mainly dependent on the microcrystallinity of the films. **Amorphous ITO** dissolved with an extremely high rate, while the etch rate of polycrystalline ITO was in a technologically interesting range. **Amorphous ITO** which was crystallized after annealing was stress free and its etch rate was 11 nm min/sup -1/. **ITO which was already polycrystalline** after deposition showed the same rate when the films were stress free. Under conditions where the films became stressed, the etch rate decreased. The compressive stress is expected to hinder the penetration of the etchant between the crystallites, thereby reducing the etch rate when the stress is increased, and vice versa. For a good pattern definition after etching, films deposited at high temperature are preferable over films that are deposited at low temperature and annealed afterwards. (7 Refs)
Subfile: A
Descriptors: amorphous state; annealing; etching; indium compounds; internal stresses; scanning electron microscopy; semiconductor thin films; sputtered coatings; tin; X-ray diffraction
Identifiers: sputter deposition; etching; ITO films; homogeneity; etch rate; microcrystallinity; amorphous films; HCl solutions; annealing; compressive stress; deposition temperature; XRD; SEM; 520 K; In/sub 2/O/sub 3/:Sn
Class Codes: A6855 (Thin film growth, structure, and epitaxy); A8115C (Deposition by sputtering); A8160C (Surface treatment and degradation of semiconductors); A6170A (Annealing processes); A6860 (Physical properties of thin films, nonelectronic); A6820 (Solid surface structure)
Chemical Indexing:
In2O3:Sn sur - In2O3 sur - In2 sur - In sur - O3 sur - Sn sur - O sur - In2O3:Sn ss - In2 ss - In ss - O3 ss - Sn ss - O ss - In2O3 bin - In2 bin - In bin - O3 bin - O bin - Sn el - Sn dop (Elements - 2,1,3)
Numerical Indexing: temperature 5.2E+02 K

43/9/17
DIALOG(R)File 2:INSPEC

08195677 INSPEC Abstract Number: A2002-07-7220F-013
Title: Properties of a novel **amorphous transparent conductive** oxide, InGaO/sub 3/(ZnO)/sub m/
Author(s): Orita, M.; Ohta, H.; Hirano, M.; Hosono, H.; Morita, K.; Tanji, H.; Kawazoe, H.
Author Affiliation: Hosono Transparent ElectroActive Mater., ERATO, Kawasaki, Japan
Conference Title: Materials Science of Novel Oxide-Based Electronics. Symposium. (Materials Research Society Symposium Proceedings Vol.623) p. 291-6
Editor(s): Ginley, D.S.; Perkins, J.D.; Kawazoe, H.; Newns, D.M.; Kozyrev, A.B.
Publisher: Mater. Res. Soc, Warrendale, PA, USA
Publication Date: 2000 Country of Publication: USA xv+433 pp.
ISBN: 1 55899 531 5 Material Identity Number: XX-2001-00776
Conference Title: Materials Science of Novel Oxide-Based Electronics. Symposium
Conference Date: 24-27 April 2000 Conference Location: San Francisco, CA, USA
Language: English Document Type: Conference Paper (PA)
Treatment: Experimental (X)
Abstract: Novel **amorphous transparent conductive** oxides, InGaO/sub 3/(ZnO)/sub m/, where m is an integer less than four, was developed. Optical transmittance in the visible region exceeded over 80% and the electric conductivity at 300 K was as large as 400 S/cm.. Both Seebeck and Hall coefficients exhibited negative values, indicating the conduction was n-type. It was suggested that 4 s orbital of Zn/sup 2+/ played a significant role for the formation of the extended state responsible for the conduction, while In/sup 3+/ acted as a modifier for the stabilization of amorphous state. (13 Refs)
Subfile: A
Descriptors: amorphous semiconductors; electrical conductivity; Hall effect; indium compounds; Seebeck effect; transparency; visible spectra; zinc compounds
Identifiers: **amorphous transparent conductive** oxide; optical transmittance; visible region; electric conductivity; Seebeck coefficient; Hall coefficient; InGaO/sub 3/(ZnO)/sub m/; 300 K; InGaO/sub 3/(ZnO)
Class Codes: A7220F (Low-field transport and mobility; piezoresistance (semiconductors/insulators)); A7280N (Electrical conductivity of amorphous and glassy semiconductors); A7840H (Visible and ultraviolet spectra of other nonmetals); A7220M (Galvanomagnetic and other magnetotransport effects (semiconductors/insulators)); A7220P (Thermoelectric effects (semiconductors/insulators))
Chemical Indexing:
InGaO3ZnO ss - Ga ss - In ss - O3 ss - Zn ss - O ss (Elements - 4)
Numerical Indexing: temperature 3.0E+02 K

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LG
with
1998 priority
date

L56 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:408856 HCAPLUS
DN 138:377439
ED Entered STN: 29 May 2003
TI Design of a thin film transistor for preventing **galvanic** phenomenon in liquid crystal displays
IN Park, Yong-In; Lee, Sang-Gul; Choi, Jae-Beom; Yi, Jong-Hoon
PA LG. Philips LCD Co., Ltd., S. Korea

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	---------------	----	--------	--------------------	--------
PI	US 6570183	B1	20030527	US 1999-435579	19991108
	KR 2000040727	A	20000705	KR 1998-56446	19981219
	KR 2000041018	A	20000715	KR 1998-56785	19981221
	US 2003183820	A1	20031002	US 2003-396333	20030326
	US 6867076	B2	20050315		
PRAI	KR 1998-56446	A	19981219		
	KR 1998-56785	A	19981221		
	US 1999-435579	A3	19991108		

AB The invention relates to the design of a thin film transistor (TFT) for preventing **galvanic** phenomenon in liq. crystal displays without requiring addnl. etching steps. The TFT consists of (i) an insulating substrate; (ii) a source/drain electrode over a source/drain active region on the supporting surface of the insulating substrate; (iii) a protective layer over portions of the source/drain active region and a gate, where the protective layer has via holes through which the source/drain electrode extends; and (iv) a conductive layer that covers the source/drain electrode and the supporting surface of the insulating substrate, where the conductive layer includes a metal oxide layer entirely covering the source/drain electrode and entirely covering the upper surface of the protective layer, and a metal connector line formed on the metal oxide layer such that the metal connector line and the source/drain electrode are connected via the metal oxide layer.

IT 1312-43-2, Indium oxide **1314-13-2**, Zinc oxide, uses 7440-32-6, Titanium, uses 7440-66-6, Zinc, uses 7440-74-6, Indium, uses 13463-67-7, Titanium oxide, uses **50926-11-9**, Indium tin oxide
RL: DEV (Device component use); USES (Uses)
(conductive film component; design of a thin film transistor for preventing **galvanic** phenomenon in liq. crystal displays)

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L26 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1985:169777 HCAPLUS
DN 102:169777
ED Entered STN: 18 May 1985
TI **Amorphous** silicon solar cell
PA Fujitsu Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 2 pp.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 59195879	A2	19841107	JP 1983-70513	19830421
PRAI	JP 1983-70513		19830421		

AB The title cell comprises a **transparent** substrate, a **transparent conductive layer**, an **amorphous** Si layer, and an electrode contg. Cr and Ni layers. Thus, a cell was prepd. on a glass substrate by providing an In-Sn oxide layer, glow-discharge depositing an **amorphous** Si layer, and sputter depositing a Cr (0.2.**mu.**) **layer** and a Ni (0.2. **mu.**) **layer**. The cell resisted **corrosion** and withstood higher temps. (180.degree.) than a similarly prepd. cell contg. Al or Al-Ti electrode.

IT **50926-11-9**
RL: USES (Uses)
(photoelec. solar cells contg. layer of, manuf. of **amorphous** silicon)

RN 50926-11-9 HCAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

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L56 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:595304 HCAPLUS
DN 137:161448
ED Entered STN: 09 Aug 2002
TI Array substrate for transflective LCD device and method of fabricating the same
IN Ha, Kyoung-su; Park, Yong-in; Kwon, Oh-nam; Kim, Woong-kwon; Choi, Jae-beom; Lee, Kyoung-muk
PA S. Korea

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002105604	A1	20020808	US 2001-984805	20011031
	US 6620655	B2	20030916		
	KR 2002034449	A	20020509	KR 2000-64740	20001101
	KR 2002034822	A	20020509	KR 2001-8489	20010220
	US 2004075782	A1	20040422	US 2003-620359	20030717
	US 6937304	B2	20050830		
PRAI	KR 2000-64739	A	20001101		
	KR 2000-64740	A	20001101		
	US 2001-984805	A3	20011031		

AB An array substrate for a transflective liq. crystal display device, includes a substrate; at least one gate line and at least one gate electrode formed on the transparent substrate; a gate-insulating layer formed over the at least one gate line and the at least one gate electrode; a silicon layer formed on the gate-insulating layer, the silicon layer being positioned above the at least one gate electrode; a source electrode and a drain electrode formed on the silicon layer and spaced apart from each other with the silicon layer overlapped there between, wherein the at least one gate electrode, the source electrode, the drain electrode, and the silicon layer define a thin film transistor (TFT); at least one data line; a first passivation layer covering the at least one data line; a transparent electrode formed on the first passivation layer; and a reflective electrode formed on the transparent electrode. An object of the present invention is to provide a transflective LCD device having decreased manufg. time and costs and increased manufg. yield without **Galvanic corrosion**.
IT **50926-11-9**, Indium tin oxide **117944-65-7**, Indium zinc oxide **150477-54-6**, Indium tin zinc oxide
RL: DEV (Device component use); USES (Uses)
(**transparent conductive** material in array substrate for transflective LCD device)
RN 50926-11-9 HCAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

RN 117944-65-7 HCAPLUS
CN Indium zinc oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Zn	x	7440-66-6

RN 150477-54-6 HCAPLUS

L86 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1989:103831 HCAPLUS
DN 110:103831
ED Entered STN: 17 Mar 1989
TI Configured semiconductor/insulator coatings for **corrosion prevention**
AU **Jain, F. C.**; Rosato, J. J.; Kalonia, K. S.; Agarwala, V. S.
CS Dep. Electr. Syst. Eng., Univ. Connecticut, Storrs, CT, 06268, USA
SO Materials Research Society Symposium Proceedings (1988), 125(Mater. Stab. Environ. Degrad.), 329-41
CODEN: MRSPDH; ISSN: 0272-9172
DT Journal
LA English
CC 72-6 (Electrochemistry)
AB Semiconductor and insulator coatings, appropriately configured in metal-semiconductor (MS) and metal-insulator (.apprxeq.20-1000 .ANG.-semiconductor (MIS) structural formats, resulted in the formation of a built-in active electronic barrier on metal surfaces. This interfacial electronic barrier impedes the transfer of electrons from the metal to oxidizing species present at the metal surface, thereby providing **protection** against **corrosion**. The effectiveness of the electronic barrier concept was confirmed by using wt. loss and cathodic and anodic polarization measurements on Al samples coated with In Sn oxide **ITO** (semiconductor) and SiO2 (thin oxide/insulator) films. In particular, Al-**ITO**, Al-**ITO**-Si3N4, Al-SiO2-**ITO**, and Al-SiO2-**ITO**-Si3N4 structures were fabricated and tested in a 1% NaCl soln. of pH 2. The films were grown by using chem. vapor deposition (CVD) and spray techniques to ensure high quality and reproducibility. The tested Al samples included those of com. purity, high-purity (**polycryst.** and single-crystal), and alloy (7075-T6). The MS and MIS configurations provided superior **corrosion protection** compared to conventional insulating films (e.g., Al-Si3N4). The active electronic barrier approach is a generic methodol. to inhibit **corrosion**, and it can be realized by using other semiconductor/insulator combinations, including semiconducting polymer coatings.
IT **50926-11-9**, Indium tin oxide
RL: USES (Uses)
(coatings, on aluminum, **corrosion prevention** in relation to)
RN 50926-11-9 HCAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L86 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1989:462195 HCAPLUS
DN 111:62195
ED Entered STN: 20 Aug 1989
TI **Corrosion prevention** in metals using layered semiconductor/insulator structures forming an interfacial electronic barrier
AU **Jain, F. C.**; Rosato, J. J.; Kalonia, K. S.; Agarwala, V. S.
CS Inst. Mater. Sci., Univ. Connecticut, Storrs, CT, 06268, USA
SO Polymer Science and Technology (Plenum) (1988), 37(Adhes., Sealants, Coat. Space Harsh Environ.), 381-404
CODEN: POSTB5; ISSN: 0093-6286
DT Journal
LA English
CC 56-10 (Nonferrous Metals and Alloys)
AB A new approach to **corrosion prevention** involving the use of layered semiconductor-insulator films on metal surfaces is described. The improved **corrosion protection** is due to the existence of a built-in electronic barrier at the metal-semiconductor (MS) or metal-(thin) insulator-semiconductor (MIS) interfaces. This is in contrast to the conventional techniques which rely on phys. barriers (e.g., paints) or high resistivity oxide-nitride films at the exposed metal surfaces. The electronic barrier, which arises due to the charge redistribution at the MS or MIS interface, serves to impede the transfer of electrons from the metal surface to foreign oxidizing species, thereby **preventing** oxidn. Specific structures fabricated and tested include: Al-In Sn oxide (**ITO**) for MS and Al-SiO3-**ITO** for MIS configurations. A comparison with Al-Si3N4 (passive barrier) is also made. High-purity (single and **polycryst** .) and com.-purity Al and Al alloy (7075-T6) samples were used. The magnitude of the electronic barrier height, and the resultant **corrosion protection**, is enhanced by the presence of a **thin** (20-100 **.ANG.**) SiO2 (insulator) **layer**, and increased In-Sn ratio in **ITO** films. The application of the active electronic barrier concept to semiconducting polymers such as doped polyacetylene, phthalocyanine, and chlorophyll is discussed.
IT **50926-11-9**, Indium tin oxide
RL: USES (Uses)
(in **corrosion prevention**, by formation of interfacial electronic barrier)
RN 50926-11-9 HCAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

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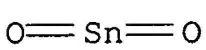
L86 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1987:222862 HCAPLUS
DN 106:222862
ED Entered STN: 26 Jun 1987
TI **Corrosion prevention** in metals using layered semiconductor/insulator structures forming an interfacial electronic barrier
AU **Jain, F. C.**; Rosato, J. J.; Kalonia, K. S.; Agarwala, V. S.
CS Inst. Mater. Sci., Univ. Connecticut, Storrs, CT, 06268, USA
SO Polymeric Materials Science and Engineering (1987), 56, 570-8
CODEN: PMSEDG; ISSN: 0743-0515
DT Journal
LA English
CC 72-6 (Electrochemistry)
Section cross-reference(s): 55
AB To implement the title method of **corrosion prevention**, a semiconductor (In Sn oxide, **ITO**) and an insulator (SiO2) were deposited on substrates of Al and/or Al alloys. The deposition was by the chem. vapor method (CVD), spray-injection CVD and air spray pyrolysis; the latter method was developed to simulate a com. application process. The energy band gaps of the **ITO** films, detd. by spectrophotometric techniques, were 1.5-3.5 eV, depending on the In/Sn ratio in the **ITO** layer. This work confirmed the effectiveness of an active electronic barrier in comparison to passive barrier films.
IT **18282-10-5**, Tin dioxide **50926-11-9**, Indium tin oxide
RL: USES (Uses)
(films, in **corrosion prevention**, Schottky barrier in relation to)
RN 18282-10-5 HCAPLUS
CN Tin oxide (SnO2) (8CI, 9CI) (CA INDEX NAME)



RN 50926-11-9 HCAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

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L26 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1988:476673 HCAPLUS
DN 109:76673
ED Entered STN: 02 Sep 1988
TI **Corrosion**-resistant **transparent conductive films**
IN Mizuhashi, Mamoru; Tada, Masashi; Matsui, Takeshi
PA Asahi Glass Co., Ltd., Japan

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63102109	A2	19880507	JP 1986-245438	19861017
PRAI	JP 1986-245438		19861017		

AB In oxide- or Sn oxide-based **transparent conductive films** are **coated** with a H- and/or B-doped C film for **corrosion** resistance, esp. as **transparent** electrodes for solar cells. The C film is doped at 5-50 at.% and has a **thickness** of 10-100 .**ANG**.. Thus, a soda-lime glass substrate having a SiO2-alkali barrier layer was **coated** with a 4200-.**ANG**. **transparent ITO** electrode contg. 10 at.% Sn, and then with a H-doped C film by sputtering using a C target in 1.5.times.10-3 torr Ar-20% CH4. The prepd. **film** had sp. **cond.** 5.0.times.10-4 .OMEGA.-cm and transmittance 82%, which remained unchanged after deposition of a p-type **amorphous** Si, whereas the **cond.** and transmittance of a **transparent** electrode without the C film was about the same as those of the film of the invention before the deposition, but were increased to 1.6 times and decreased to 0.9 times, resp., of their original values after the deposition.
IT **50926-11-9**
RL: USES (Uses)
(hydrogen- and/or boron-doped carbon coating on, for **corrosion** -resistant **transparent conductive film**)
RN 50926-11-9 HCAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

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L26 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1989:42057 HCAPLUS

DN 110:42057

ED Entered STN: 04 Feb 1989

TI Electrically **conductive transparent films** for solar cells

IN Mizuhashi, Mamoru; Tada, Masashi; Matsui, Takeshi

PA Asahi Glass Co., Ltd., Japan

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63195149	A2	19880812	JP 1987-27368	19870210
PRAI	JP 1987-27368		19870210		

AB In2O3- and/or SnO2-based elec. **conductive transparent films** are **coated** with (H-doped) TiC films to improve their **corrosion** resistance. The TiC films preferably have a **thickness** of 10-100 .**ANG**. and the H concn. is preferably <50 at.%. Thus, an In-10% Sn target was used to deposite a 4200-. **ANG**. **ITO film** on a soda-lime glass plate at 370.degree. in a 2.2 .times. 102-torr Ar-38% O atm., and the **ITO** film was **coated** with a 60-.**ANG**. H-doped (15 at.%) TiC film by sputtering in a 2 .times. 10-4 torr Ar-30% CH4 atm. using a TiC target. The resistivity (2.5 .times. 10-4 .OMEGA.-cm) and visible-light transmittance (80%) of the composite film were about the same as uncoated **ITO** film and remained unchanged after deposition of B-doped p-**amorphous** Si film, whereas the resistivity of an uncoated **ITO** film increased to 1.6 fold and the transmittance dropped to 0.9 fold of their original values after the deposition. The invention composite films are useful for solar cells and display devices.

L86 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1987:92446 HCAPLUS
DN 106:92446
ED Entered STN: 21 Mar 1987
TI Formation of an active electronic barrier at aluminum/semiconductor interfaces: a novel approach in **corrosion prevention**
AU **Jain, F. C.**; Rosato, J. J.; Kalonia, K. S.; Agarwala, V. S.
CS Electr. Eng. Comput. Sci. Dep., Univ. Connecticut, Storrs, CT, 06268, USA
SO Corrosion (Houston, TX, United States) (1986), 42(12), 700-7
CODEN: CORRAK; ISSN: 0010-9312
DT Journal
LA English
CC 72-6 (Electrochemistry)
Section cross-reference(s): 76
AB Al surfaces exhibit significantly improved **corrosion protection** when coated with suitable semiconductor/insulator thin films. These coatings, generally realized in metal-semiconductor (MS) or metal-insulator-semiconductor (MIS) structural configurations, lead to an interfacial elec. field that acts as an effective built-in electronic barrier. This active barrier significantly impedes electron transfer from the Al surface to foreign species that cause oxidn. by accepting the electrons. Anodic polarization data on numerous samples fabricated in both MS [e.g., Al-InSn oxide (**ITO**)] and MIS (e.g., Al-SiO2-**ITO**) configurations have demonstrated the **protective** nature of the built-in active electronic barrier. The electronic barrier heights were shown to increase in (1) the presence of a **thin** (20- to 100- .**ANG**.)SiO2 **layer** at the metal/semiconductor interface and (2) the energy gap of **ITO**, which depends on the In content. A comparison of these results with data obtained on plasma-deposited Al-Si3N4 samples is also given.
IT **50926-11-9**, Indium tin oxide
RL: PRP (Properties)
(electrolytic polarization of aluminum coated with silica and, with and without silicon nitride, in sodium chloride soln., electronic barrier and **corrosion prevention** in relation to)
RN 50926-11-9 HCAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

21/9/19
DIALOG(R)File 2:INSPEC

06366878 INSPEC Abstract Number: B9610-7260-054
Title: High performance TFT-LCD using low resistivity bus-lines
Author(s): Yamamoto, M.; Kobayashi, I.; Hirose, T.; Tsuboi, N.; Mino, Y.; Okafuji, M.; Tamura, T.
Journal: National Technical Report vol.42, no.3 p.34-40
Publisher: Matsushita Electric Industrial Co,
Publication Date: June 1996 Country of Publication: Japan
CODEN: NTROAV ISSN: 0028-0291
SICI: 0028-0291(199606)42:3L.34:HPUR;1-J
Material Identity Number: N046-96004
Language: Japanese Document Type: Journal Paper (JP)
Treatment: Applications (A); Practical (P)
Abstract: New aluminum alloys for gate and source bus-lines and an anodic oxidation process for gate insulators have been developed for high-performance a-Si TFT-LCDs. The Al-Zr alloy having low resistivity and low hillock density is suitable for gate bus-lines, and able to easily control the taper shape and to narrow the line. The alloy has high **corrosion** resistance at high humidity, so it is possible to attach the TAB driver directly to the gate line. The anodically oxidized gate insulator grown directly on the gate line has high breakdown voltage and highly uniform **thickness**, achieving high productivity. The Al-W alloy for source-drain (SD) electrode prevents **galvanic** reaction between the **ITO** pixel and SD electrodes. As a result, 73% pixel aperture ratio for the 15-inch class EWS has been achieved for a Si TFT-LCDs. Furthermore, high productivity, high yield and low-cost process have been realized. (5 Refs)
Subfile: B
Descriptors: aluminium alloys; **amorphous** semiconductors; elemental semiconductors; insulated gate field effect transistors; liquid crystal displays; oxidation; silicon; thin film transistors; tungsten alloys; zirconium alloys
Identifiers: low resistivity bus-lines; source bus-lines; anodic oxidation; gate insulators; a-Si TFT-LCD; Al-Zr alloy; hillock density; gate bus-lines; taper shape; **corrosion** resistance; humidity; TAB driver; breakdown voltage; uniform **thickness**; productivity; Al-W alloy; source-drain electrode; **galvanic** reaction; 15 in; Si; Al-Zr; Al-W; **ITO**; InSnO
Class Codes: B7260 (Display technology and systems); B2560R (Insulated gate field effect transistors); B4150D (Liquid crystal devices); B2520F (Amorphous and glassy semiconductors); B2520C (Elemental semiconductors); B2550E (Surface treatment for semiconductor devices)
Chemical Indexing:
Si sur - Si el (Elements - 1)
Al-Zr int - Al int - Zr int - Al el - Zr el (Elements - 1,1,2)
Al-W int - Al int - W int - Al el - W el (Elements - 1,1,2)
AlW sur - Al sur - W sur - AlW ss - Al ss - W ss (Elements - 2)
AlZr sur - Al sur - Zr sur - AlZr ss - Al ss - Zr ss (Elements - 2)
InSnO sur - In sur - Sn sur - O sur - InSnO ss - **In ss - Sn ss - O ss** (Elements - 3)
Numerical Indexing: size 3.8E-01 m

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L73 ANSWER 16 OF 25 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:114862 HCAPLUS
DN 126:218977
ED Entered STN: 19 Feb 1997
TI **Microstructural** and electrochemical aspects of wet etching ITO **films**
AU Jacobs, J. W. M.; Van Rooijen, H. F.; Van Den Meerakker, J. E. A. M.; Vink, T. J.
CS Philips Flat Panel Display, Eindhoven, 5656, Neth.
SO Proceedings - Electrochemical Society (1997), 96-23(Thin Film Transfer Technologies), 158-173
CODEN: PESODO; ISSN: 0161-6374
AB An overview is presented of work performed at Philips in basic R&D areas which underlie ITO-related technol. problems in the wet processing of LCD substrates. The stress and **microstructure** of ITO **films** were investigated by x-ray diffraction, TEM, and other techniques, and correlated to their etch behavior. The ITO homogeneity throughout the **film thickness** was studied as a function of various ITO sputter conditions and post-deposition annealing, and is shown to have a pronounced effect on the ITO patterning characteristics. The ITO etch process was studied in detail by kinetic and electrochem. measurements in various acids. Special attention was paid to aq. HCl solns. and the catalytic effect of added oxidizing agents such as Fe^{3+} ions. A chem. etch mechanism was proposed to explain the ITO etch kinetics and the role of the catalyst in the ITO etch reaction. Finally, examples, of ITO/metal (Al, Cr, and Mo) combinations exhibiting anomalous behavior in LCD wet processing are discussed. These are explained by **galvanic** element formation, which may drastically affect the rate of electrochem. reactions occurring at the ITO and metal surfaces. 9 Refs.
IT **50926-11-9**, Indium tin oxide
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(**films**; **microstructural** and electrochem. aspects of wet etching ITO **films**)
RN 50926-11-9 HCAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

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L73 ANSWER 17 OF 25 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1995:657610 HCAPLUS
DN 123:44035
ED Entered STN: 07 Jul 1995
TI Multiple layer **thin films** with improved corrosion resistance
IN Pass, Thomas; Woodard, Floyd E.
PA Southwall Technologies Inc., USA

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9506269	A1	19950302	WO 1994-US9331	19940819
	W: JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5510173	A	19960423	US 1993-110350	19930820
	US 5763063	A	19980609	US 1996-635467	19960422
PRAI	US 1993-110350	A	19930820		

AB The durability of **thin** metal coatings and particularly substantially transparent copper and silver plus noble metal coatings and their ability to withstand corrosive environments is improved by overcoating the metal layers with a double dielec. coating comprising a first layer formed from a dielec. based on indium and/or zinc and a second layer made up of a dielec. based on indium and tin. These overcoatings are more effective than a single coating based on one metal or a single coating based upon the two metals. Transmissive optical stacks employing the coatings are also described.

IT **Corrosion**
(-resistant materials, multiple layer **thin films** with improved corrosion resistance for optical stacks)

IT **1314-13-2**, Zinc oxide, uses **50926-11-9**, Indium tin oxide
RL: DEV (Device component use); USES (Uses)
(multiple layer **thin films** with improved corrosion resistance for optical stacks)

RN 1314-13-2 HCAPLUS
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O═Zn

RN 50926-11-9 HCAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

L86 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1987:129952 HCAPLUS
DN 106:129952
ED Entered STN: 17 Apr 1987
TI Semiconductor/insulator films for **corrosion protection**
AU **Jain, F. C.**
CS Dep. Elec. Eng. Comput. Sci., Connecticut Univ., Storrs, CT, USA
SO Report (1985), NADC-86028-60; Order No. AD-A169119/5/GAR, 52 pp. Avail.: NTIS
From: Gov. Rep. Announce. Index (U. S.) 1986, 86(21), Abstr. No. 646,997
DT Report
LA English
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 72
AB Al surfaces exhibit significantly improved **corrosion protection** when they are coated with suitable semiconductor/insulator thin films. These coatings, generally realized in Metal-Semiconductor (MS) or MIS) structural configurations, give rise to an interfacial elec. field which acts as an effective built-in electronic barrier. This active barrier significantly impedes the transfer of electrons from the Al surface to foreign species which cause oxidn. by accepting the electrons. Anodic polarization data on numerous samples fabricated in both MS (e.g. Al/In Sn oxide (**ITO**)) and MIS (e.g. Al/SiO2/**ITO** configurations have demonstrated the **protective** nature of the built-in active electronic barrier. In particular the authors have obsd. a rest potential of -1.126 V (1% NaCl, 2 pH soln.) for Al/SiO2/**ITO** samples in polarization tests. The electronic barrier heights increase with (1) the presence of a **thin** (20-100 .**ANG.**) SiO2 **layer** at the metal-semiconductor interface; and (2) the energy gap of **ITO** which depends upon the In content. A comparison of these results with data obtained on plasma-deposited Al/Si3N4 samples is also presented.
IT **50926-11-9**, Indium tin oxide
RL: USES (Uses)
(aluminum **corrosion protection** by film couples of, with silicon dioxide)
RN 50926-11-9 HCAPLUS
CN Indium tin oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
In	x	7440-74-6
Sn	x	7440-31-5

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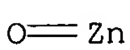
L73 ANSWER 13 OF 25 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:635042 HCAPLUS
DN 129:218964
ED Entered STN: 08 Oct 1998
TI Photocorrosion of coupled CdS/CdSe photoelectrodes coated with ZnO. Atomic force microscopy and X-ray diffraction studies
AU Rincon, M. E.; Sanchez, M.; Ruiz-Garcia, J.
CS Centro de Investigacion en Energia, UNAM, Mor, 62580, Mex.
SO Journal of the Electrochemical Society (1998), 145(10), 3535-3544
AB The stability of photoelectrochem. cells based on chem. deposited CdS/CdSe coupled **films** has been examd. Changes in surface **structure** and compn. of coated and uncoated CdS250/CdSe coupled **films** as well as CdSe **films** have been examd. by at. force microscopy and X-ray diffraction. The superior stability at short times of the coupled system, compared to CdSe, is related to the increase in the hexagonal character (stronger bonding) and the smaller recombination rate of the photogenerated carriers. At large operation times, the lower stability of the coupled system is related to band opening, which increases the oxidn. rates of the passivating Se/S layer. The recrystn. of illuminated CdSe photoanodes, and coupled **films** working in the dark can be explained by the presence of surface states and back reactions. Stable short-circuit currents were obtained with coupled **films coated** with a **thin layer** (350 **.ANG.**) of ZnO. It is likely that oxidn. and redeposition of the protective ZnO **film** competes for hole consumption. The rough morphol. of the coated photoelectrodes correlates to a substantial increase in surface area that resembles ZnO particulate **film** electrodes sensitized by CdSe and CdS.
IT **Corrosion**
IT **1314-13-2**, Zinc oxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(at. force microscopy and x-ray diffraction studies on photocorrosion of coupled CdS/CdSe photoelectrodes coated with ZnO)
RN 1314-13-2 HCAPLUS
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)



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L12 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:222979 HCAPLUS
DN 128:251109
ED Entered STN: 22 Apr 1998
TI Characterization of directly and indirectly oxidized thin indium films
AU Gopchandran, K. G.; Joseph, Benny; Abraham, Johny T.; Koshy, Peter; Vaidyan, V. K.
CS Department of Physics, University of Kerala, Trivandrum, 695 581, India
SO Indian Journal of Engineering & Materials Sciences (1997), 4(6), 282-286
CODEN: IEMSEW; ISSN: 0971-4588
PB National Institute of Science Communication, CSIR
DT Journal
LA English
CC 76-1 (Electric Phenomena)
Section cross-reference(s): 73
AB The structure and morphol. of In2O3 films prepd. by direct and indirect oxidn. mechanisms are reported. X-ray diffraction studies of In2O3 films prepd. by annealing of vacuum deposited indium films have shown a <111> texture while the texture of reactively deposited (directly oxidized) films was sensitive to deposition conditions. SEM observations show porosity in films obtained by annealing and smooth **polycryst.** nature for reactively deposited films. Elec. and optical properties of directly oxidized films are found to be superior to those of indirectly heated films.

L12 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:249893 HCAPLUS
DN 129:10043
ED Entered STN: 02 May 1998
TI Properties of fluorine-doped ZnO deposited onto glass by spray pyrolysis
AU Sanchez-Juarez, A.; Tiburcio-Silver, A.; Ortiz, A.
CS Centro de Investigacion en Energia - UNAM P.O. Box 34, Temixco, 62580, Mex.
SO Solar Energy Materials and Solar Cells (1998), 52(3-4), 301-311
CODEN: SEMCEQ; ISSN: 0927-0248
PB Elsevier Science B.V.
DT Journal
LA English
CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 52
AB Fluorine-doped ZnO (FZO) thin films were deposited onto glass by the spray pyrolysis process, using zinc acetate and NH4F as precursors. The role of F/Zn at. ratio, in the starting soln., and the substrate temp. were studied and the optimum deposition conditions were outlined. The x-ray diffraction analyses of the films show that there is incorporation of F atoms in the film. The FZO films are of **polycryst**. nature with a preferential growth along (0 0 2) plane parallel to the surface of the substrate for temps. >400.degree.. It is obsd. that fluorine incorporation in the films affects the grain size, which decreases as the F/Zn at. ratio increases, for the same substrate temp. The films are uniform and exhibit an optical transmittance >85% in the visible region. A crit. substrate temp. (425.degree.) was obsd. at which the films show an n-type elec. dark cond. .ltoreq.9(.OMEGA. cm)-1 when using a soln. flow rate of 16 mL/min and a gas flow rate of 10 L/min.

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L12 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:90924 HCAPLUS
DN 130:190101
ED Entered STN: 12 Feb 1999
TI Preparation and properties of sprayed undoped and fluorine doped tin oxide films
AU Shanthi, S.; Subramanian, C.; Ramasamy, P.
CS Crystal Growth Centre, Anna University, Chennai, 600 025, India
SO Materials Science & Engineering, B: Solid-State Materials for Advanced Technology (1999), B57(2), 127-134
CODEN: MSBTEK; ISSN: 0921-5107
PB Elsevier Science S.A.
DT Journal
LA English
CC 76-3 (Electric Phenomena)
AB Thin films of undoped and fluorine doped tin oxide were prepd. on borosilicate glass plates by a spray pyrolysis technique. The effect of process parameters, such as tin chloride concn. in the precursor soln., substrate to nozzle distance, carrier gas (air) flow rate, substrate temp., and doping level of fluorine in the spray soln., on the phys. properties of the tin oxide thin films were studied. The grown films were **polycryst**. in nature >350.degree., the [110] reflection having the max. intensity in all cases. Films of .apprx.10-3 cm resistivity and high visible transparency of .apprx.88% were obtained at the optimum substrate temp. of 425.degree. and fluorine doping concn. of 57 at.%. The optical studies show that the optimized films have a direct allowed bandgap of 4.25 eV and indirect allowed bandgap of 2.71 eV.

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L12 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:342166 HCAPLUS
DN 131:123454
ED Entered STN: 04 Jun 1999
TI Development of spray technique for the preparation of thin films and characterization of tin oxide transparent conductors
AU Amanullah, F. M.; Saleh Al Mobarak, M.; Al-Dhafiri, A. M.; Al-Shibani, K. M.
CS College of Science, Department of Physics, King Saud University, Riyadh, 11451, Saudi Arabia
SO Materials Chemistry and Physics (1999), 59(3), 247-253
CODEN: MCHPDR; ISSN: 0254-0584
PB Elsevier Science S.A.
DT Journal
LA English
CC 76-2 (Electric Phenomena)
AB Tin oxide (TO) thin films of different thickness were prepd. by a specially designed, fabricated and developed spray technique using a stock soln. of alc. stannous chloride (0.5M concn.). The films were characterized by x-ray diffraction, optical transmission and elec. studies. The XRD patterns show that the films are **polycryst.** in nature and the results are in good agreement with ASTM data. From the XRD data 'd' values and grain size of the crystallites were calcd. The grain size of TO films lie in the range 300-514 A. Refractive index (n) and thickness of the films were detd. using optical transmission data. The effect of film thickness on different parameters (figure of merit, cond., transmission and refractive index) is presented and discussed. Variation of sheet resistance as a function of film thickness is discussed. The optical and elec. properties of TO films strongly depend on the thickness of the film. Optimum conditions are established based on the max. figure of merit value. The film prepd. at 450.degree. with the max. thickness of 5262 A showed the max. figure of merit 0.7 .times. 10-3 .OMEGA.-1. The corresponding film properties are R = 30 .OMEGA. per square, Tf = 0.70.
IT Transparent films
(elec. conductive; development of spray technique for the prepn. of thin films and characterization of tin oxide transparent conductors)

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L12 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:433650 HCAPLUS
DN 131:123436
ED Entered STN: 15 Jul 1999
TI Atmospheric-pressure chemical vapor deposition of fluorine-doped tin oxide thin films
AU Suh, Seigi; Zhang, Zuhua; Chu, Wei-Kan; Hoffman, David M.
CS Department of Chemistry and Materials Research Science and Engineering Center, University of Houston, Houston, TX, 77204, USA
SO Thin Solid Films (1999), 345(2), 240-243
CODEN: THSFAP; ISSN: 0040-6090
PB Elsevier Science S.A.
DT Journal
LA English
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 75
AB Fluorine-doped tin oxide films were deposited on silicon, glass and quartz substrates at 370-490.degree. by atm.-pressure CVD from (CH3(CH2)3)2Sn(O2CCF3)2 and oxygen. Backscattering spectra indicate the films are stoichiometric with O/Sn ratios of 1.9-2.0. Nuclear reaction anal. (NRA) for fluorine gives F/Sn ratios of 0.005-0.015 with the amt. of fluorine in the films increasing with increasing deposition temp. The films are transparent in the visible region (>75%) and have resistivities .gtoreq.8.2 .times. 10-4 .OMEGA. cm. X-ray diffraction studies indicate the films deposited on glass are **polycryst**.
IT Transparent films
(elec. conductive; atm.-pressure chem. vapor deposition of fluorine-doped tin oxide thin film transparent conductors on Si, glass and quartz substrates)

L12 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:419068 HCAPLUS
DN 133:245868
ED Entered STN: 23 Jun 2000
TI Aqueous sol-gel routes to conducting films of indium oxide and indium-tin-oxide
AU Perry, Carole C.; McGiveron, J. K.; Harrison, Philip G.
CS Dep. Chem. Phys., The Nottingham Trent Univ., Nottingham, UK
SO Proceedings of SPIE-The International Society for Optical Engineering (2000), 3943(Sol-Gel Optics V), 270-279
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 76-5 (Electric Phenomena)
AB Thin films of indium tin oxide (ITO) are of interest because of their high transparency and low elec. resistivity. Applications include use as electrodes for liq.-crystal displays and as heat mirrors for solar energy devices. The authors have developed totally aq. routes to indium oxide (IO) and ITO materials because: (1) the particulate sols afford a longer shelf life than alkoxyide derived materials, (2) orgs. do not have to be removed from the films by baking, and (3) the starting materials are cheaper than the corresponding alkoxides. Indium and **mixed** indium/tin sols have been prepd. form inorg. solns. and treated with alkali to produce white thixotropic sols .apprx.0.64 in Mz+ ions. Films were prepd. by spinning on low iron or pure silica slides previously cleaned with DECON and washed with distd. water. The films were subsequently heated at 773 K in air, or 1173 K in air or nitrogen. Films with the lowest resistivity contained .apprx.5% Sn and had an av. optical transmittance between 400 and 600 nm of 95%. The films were non-porous, smooth in texture, .apprx.300 nm thick and had a band gap energy of 3.22 eV.
IT Transparent films
(elec. conductive; aq. sol-gel routes to conducting films of indium oxide and indium-tin-oxide)

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L3 ANSWER 1 OF 1 HCAPLUS
AN 1982:495398 HCAPLUS
DN 97:95398
ED Entered STN: 12 May 1984
TI **Thin metallic oxides** as **transparent conductors**
AU Manifacier, J. C.
CS Cent. Etud. Electron. Solides, Univ. Sci. Tech. Languedoc, Montpellier, 34060, Fr.
SO Thin Solid Films (1982), 90(3), 297-308
CODEN: THSFAP; ISSN: 0040-6090
DT Journal; General Review
LA English
CC 52-0 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 73
AB A review with 74 refs. Methods of prepn., elec. and optical properties, characterization of layers, and uses of SnO2 and/or In2O3 in solar cells and solar collectors are discussed.
ST review indium oxide solar cell; collector solar tin oxide review
IT Solar collectors
(absorbers, from black molybdenum and fluorine-doped tin dioxide)
IT Photoelectric devices, solar
(silicon, contg. layer of indium tin oxide or tin dioxide)